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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/791,440 | 03/02/2004 | Rohit Sachdeva | 01-102-C | 3433 |

38600 7590 10/30/2006

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EXAMINER

KILKENNY, PATRICK J

ART UNIT PAPER NUMBER

3732

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/791,440 | SACHDEVA ET AL. | |
| | Examiner | Art Unit | |
| | Patrick J. Kilkenny | 3732 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) ¹⁻¹⁵~~4~~ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11-14, 16, 17, 19-22, 26-58, 61-64, 66, 67 and 69-75 is/are rejected.
- 7) ☐ Claim(s) 10, 15, 18, 23-25, 59, 60, 65 and 68 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because they include black and white photographs. 37 CFR 1.84. (b)(1) states:

Black and white. Photographs, including photocopies of photographs, are not ordinarily permitted in utility and design patent applications. The Office will accept photographs in utility and design patent applications, however, if photographs are the only practicable medium for illustrating the claimed invention. For example, photographs or photomicrographs of: electrophoresis gels, blots (e.g., immunological, western, Southern, and northern), auto- radiographs, cell cultures (stained and unstained), histological tissue cross sections (stained and unstained), animals, plants, in vivo imaging, thin layer chromatography plates, crystalline structures, and, in a design patent application, ornamental effects, are acceptable. If the subject matter of the application admits of illustration by a drawing, the examiner may require a drawing in place of the photograph. The photographs must be of sufficient quality so that all details in the photographs are reproducible in the printed patent.

In this case, photographs are not deemed to be the only practicable medium for illustrating the claimed invention. Furthermore, the photographs are not of sufficient quality so that all details are reproducible in the printed patent.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 11-13, 16-17, 19, 33-38, 42-58, 61-64, 66-67, and 69-75 are rejected under 35 U.S.C. 102(e) as being anticipated by Doyle et al. (5,879,158). Doyle et al discloses the methods, and associated apparatus, for placement of orthodontic brackets via virtual model (Column 5, lines 1-6), which is displayed initially in the maloccluded state (Column 5, lines 49-52), however the goal of the methodology is to alter the virtual tooth model into a target state by moving, or blocking movement, or one or more teeth. Once the virtual tooth model is displayed a virtual appliance placement reference for each tooth is selected and displayed on the tooth in the 3D model (Column 6, lines 18-41). Then virtual appliances (both archwire and brackets) are displayed and place in reference to the virtual appliance placement reference (Columns 6-7, lines 42-25). The virtual brackets are brought inline to the tooth against its perspective virtual arch.wire and adjustments are made to line the bracket and wire against the virtual appliance placement reference and to make sure appropriate torques are obtained (Column 7-8, lines 51-41). This is done for each tooth individually, as well as for assessing all the teeth as a whole. The appliance placement reference is described as a bracket sighting point (BSP). It is the point over which the bracket base is centered on the tooth, and therefore a bracket height reference with respect to the tooth. It is determined by a vertical plane and mid-transverse plane (occlusal) reference. This BSP can be

determined for each tooth individually for both the upper and lower virtual arches. (Column 6, lines 18-41). Adjustments are also made to see the bracket is properly adapted to the surface of the tooth for which it is to be placed and to measure any gaps that may occur (Column 9, lines 40-53). Navigation tools also allow fine tuning by the practitioner to insure that the marginal ridges are aligned and there is are stable interproximal contact points (Columns 8-9, lines 64-05). Similar tools also allow the upper and lower cusp tips are aligned into a desired position to allow proper bite contact (Column 9, lines 6-49). It is also possible during the course of the virtual treatment methods that the teeth are hidden from view with respect to the virtual appliances (Column 7, lines 8-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20-22 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle et al. Doyle et al. discloses the claimed invention with the exception of the occlusal plane being: the lower plane, upper plane, or arbitrary plane; derive from cusp tips, marginal ridges, independent segments, or arbitrarily derived. It would have been obvious to modify the invention of Doyle et al. so the the occlusal

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plane represented the lower plane, upper plane, or an arbitrary plane, and was derived from cusp tips, marginal ridges, independent segments, or arbitrarily derived, since it is known in the art that these are the parameters from which occlusal planes are derived and then described. Furthermore, the applicant has not shown that selecting one or the other is any way critical over the alternative, and that choosing one over the other solves any stated problem.

Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle et al. Doyle et al discloses the claimed invention with the exception of disclosing the arch wire being straight, custom, or hybrid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods and apparatus of Doyle et al. by using straight, custom, or hybrid arch wires since all three are well known in the art dependent upon the orthodontic bracket type and type malocclusion.

Allowable Subject Matter

Claims 10, 15, 18, 23-25, 59-60, 65 and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for prior art of reference. Any inquiry concerning

this communication or earlier communications from the examiner should be directed to Patrick J. Kilkenny whose telephone number is (571) 272-8684. The examiner can normally be reached on Mon-Fri, 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Patrick J. Kilkenny



CRIS L. RODRIGUEZ
PRIMARY EXAMINER